Wetland Mitigation Construction Final Report

L.E. CARPENTER & COMPANY

170 North Main Street
Borough of Wharton
Morris County, New Jersey

Prepared for:

RMT INC.

2025 East Beltline Avenue SE, Suite 402
Grand Rapids, MI 49546

Prepared by:

JFNew

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August 28, 2005

346432

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INTRODUCTION

L.E. Carpenter & Company (LEC) was granted Authorization for Freshwater Wetlands Statewide General Permit No. 4, permit number 1439-04-0001.1 (FWW 040001), by the New Jersey Department of Environmental Protection (NJDEP) Land Use Regulation Program (LURP) on February 25, 2005. This authorization permitted the disturbance of ±0.42 acre of freshwater wetlands and/or State open waters and ±0.19 acre of wetland transition area. These temporary impacts were required in order to implement the Remedial Action Work Plan (RAWP) for the subject LEC site located at 170 North Main Street, Borough of Wharton, Morris County, New Jersey (Figure 1). The project area is located in the USGS Dover, New Jersey quadrangle with approximate center state plane coordinates of N 754326.5 E 470891.83 (NAD 1983) (Figure 1).

A Wetland Restoration Plan for temporary wetland impacts was prepared and submitted with the initial permit application package. A set of plan sheets entitled Wetland and Stream Encroachment Applications, prepared by RMT, Inc, dated February 21, 2005 outlines proposed restoration activities, planting plans, and final grading, as amended, through the permitting process.

RESTORATION PLAN

LEC proposed to provide wetland restoration for unavoidable temporary wetland impacts (0.42 acre) in the form of full re-establishment of pre-existing grades and vegetation communities. Restoration was proposed for completion at the same locations of disturbance. Restoration of temporary impacts to transition zones (0.19 acre) was proposed for completion in the same manner as outlined above. All impact areas were the result of excavation activities directly associated with implementation of the New Jersey Department of Environmental Protection (NJDEP) and United States Environmental Protection Agency (USEPA) approved RAWP. Contaminated soils under the existing wetland systems were proposed for removal and clean topsoil would be placed back within the wetland impact areas, restoring them to pre-existing grade. As mentioned above, proposed restoration activities were outlined in the February 21, 2005 plan sheets.

On June 24, 2005, a post-final grade construction meeting was held on site to review post construction site conditions and permit-approved wetland restoration activities. Items discussed and reviewed during this meeting included project progress to date, permit compliance issues, and proposed planting plan species substitutions (Appendix A). Those in attendance included:

Jill Aspinwall, NJDEP LURP, Case Manager
Jo Dale Legg, NJDEP LURP, Senior Environmental Specialist Mitigation Unit
Nicholas Clevett, RMT, Inc., Project Manager
Brian Majka, JFNew, Restoration Services Unit Manager

Soil Preparation and Grading

Grading of the restoration areas was completed irregularly and with very little compaction in June 2005. The soil was very loosely distributed prior to the final agency site visit on June 24, 2005, and steady rains had further loosened the soil prior to planting. All seed was broadcast and hand-raked into the soil.

A professional survey of all wetland disturbed and restoration areas, and transition zones was completed on August 4, 2005 by Weber Associates, Inc., located in Sparta, New Jersey (Appendix B). These results illustrate the completion of successful final grading in accordance with permitted plans. As-built wetland and transition zone impacts and final grades are shown on Figure 2. The perimeter of the wetland restoration and transition zone boundaries was marked in the field with 3-foot lengths of 3-inch white PVC. These PVC boundary points are shown on Figure 2. The three-foot length was agreed upon during the post-grading construction meeting (Appendix A).

Prior to being delivered and spread across the site, the topsoil proposed for use in both the wetland area and transition zones was tested by the borrow source (Bendendorf Landscaping) for organic composition. The analytical results are included (Appendix C). These test results were reviewed by NJDEP LURP staff and accepted during the June 24, 2005 post-construction meeting. Subsequently, NJDEP LURP did not require organic analysis of soils collected at the six locations outlined below.

In accordance with permit Special Condition 11e, six representative soil borings were collected and evaluated on June 28, 2005. The locations of the six borings are shown on Figure 2. A description of each soil boring profile is provided below.

- **Boring 1 (40.54.15.00748N 74.34.31.41719W)**

0 – 10"	10YR 4/3	loam
10 – 20"	10YR 3/3	loam

- **Boring 2 (40.54.14.42438N 74.34.31.14259W)**

0 – 13"	10YR 4/2	loamy clay
13 – 20"	10YR 3/2	loamy clay

- **Boring 3 (40.54.13.75148N 74.34.31.31904W)**

0 – 15"	10YR 4/3	loam
15 – 20"	10YR 3/1	loamy clay

- **Boring 4 (40.54.13.94790N 74.34.29.98567W)**

0 – 2"	10YR 4/3	loam
2 – 20"	10YR 3/2	loam

- **Boring 5 (40.54.14.63046N 74.34.29.45719W)**

0 – 9"	10YR 4/3	loam
9 – 20"	10YR 3/2	loam

- **Boring 6 (40.54.12.80847N 74.34.34.70682W)**

0 – 20"	10YR 3/3	loamy clay

Hydrology

The restoration of wetland areas at their existing locations along the floodplain of the Rockaway River will allow for the successful re-establishment of wetland hydrology. This existing hydrologic source is primarily comprised of direct surface water flow from the river. Sufficient wetland hydrology is currently present and will continue to be after the completion of site remediation activities. With the restoration of the impact areas to pre-existing grades, no obstructions to surface water flow have resulted from either remedial or restorative actions.

Planting Plan

Once earth-moving activities were completed in June 2005, seed and woody plant materials were installed throughout the restored wetland and transition zones between June 27th and 29th 2005. The bottom contours of all temporary wetland and transition zone impact areas were seeded with the appropriate native species mixes as specified in the restoration plan. Only native plant species were used for establishing the permanent vegetative community. No exotic or hybrid nursery species were utilized. The forested/scrub-shrub wetland and transition zone impact areas were also planted with bareroot trees as described in the subsequent narrative.

Along the 0.03 acre of drainage channel restoration, the following planting techniques were implemented. The slope was backfilled with topsoil and compacted to prevent sloughing. The sideslope was then seeded with the slope stabilization seed mix specified in the restoration plan and covered with a double-sided straw coconut erosion control blanket equivalent to North American Green SC-150. Shrubs were planted on at least 4-foot centers across the 0.03 acre of slope stabilization.

A list of actual plant species, seeding rates, and planting quantities installed within the restored wetland areas is provided below and visually shown on Figure 2. These quantities are presented assuming 100% pure live seed (PLS) test results. The total number of tree and shrub species planted was slightly increased over that number initially proposed to compensate for the late-season planting date. Several tree and shrub species substitutions were required due to availability of nursery stock at the time of planting. However, these substitutions were proposed and approved by NJDEP LURP staff during the post-grading site inspection on June 24, 2005 (Appendix A).

The approved substitutions consisted of the following:

- Pussy willow (*Salix discolor*) will replace black willow (*Salix nigra*) and sandbar willow (*Salix exigua*)
- Green ash (*Fraxinus pennsylvanica*) will replace red maple (*Acer rubrum*)
- Black walnut (*Juglans nigra*) will replace American elm (*Ulmus americana*)

Emergent Wetland (PEM) Impact Area (0.19 acre)

Emergent Wetland Seed Mix (32.27 pounds/acre)

NATIVE COMPONENT

Scientific Name	Common Name	Ounces/Acre
Acorus calamus	Sweet flag	8.50
Alisma subcordatum	Common water plantain	8.00
Echinochloa crusgalli	Barnyard grass	12.00
Eleocharis obtusa	Blunt spike rush	3.00
Iris virginica shrevei	Blue flag iris	4.00
Juncus effusus	Soft rush	3.00
Leersia oryzoides	Rice cut grass	4.00
Lobelia cardinalis	Cardinal flower	0.75
Lobelia siphilitica	Great blue lobelia	1.00
Mimulus ringens	Monkey flower	2.00
Peltandra virginica	Arrow arum	16.00
Polygonum pensylvanicum	Pinkweed	6.00
Pontederia cordata	Pickerelweed	8.00
Sagittaria latifolia	Common arrowhead	8.00
Scirpus validus	Softstem bulrush	6.00
Sparganium eurycarpum	Common burreed	10.00
TOTAL		100.25 oz/acre
	=	6.27 lbs/acre

TEMPORARY COVER COMPONENT

Scientific Name	Common Name	Ounces/Acre
Agrostis alba	Redtop	16.00
Lolium multiflorum	Annual rye	400.00
TOTAL		416.00 ounces/acre
	=	26.00 pounds/acre

Main Forested/Scrub-Shrub (PFO/SS) Impact Area (0.20 acre)

Wooded Wetland Understory Seed Mix (34.41 pounds/acre)

NATIVE COMPONENT

Scientific Name	Common Name	Ounces/Acre
Actinomeris alternifolia	Wingstem	1.00
Alisma subcordatum	Common water plantain	3.00
Aster umbellatus	Flat-top aster	1.25
Bidens cernua	Nodding bur marigold	3.00
Calamagrostis canadensis	Blue joint grass	3.00
Carex crinita	Fringed sedge	2.00
Carex hystericina	Porcupine sedge	4.00
Carex lupulina	Common hop sedge	4.00
Carex vulpinoidea	Fox sedge	6.00
Chelone glabra	Turtlehead	1.25
Elymus canadensis	Canada wild rye	6.00
Elymus virginicus	Virginia wild rye	12.00
Glyceria striata	Fowl manna grass	4.00
Helenium autumnale	Sneezeweed	1.50
Leersia oryzoides	Rice cut grass	2.00
Lobelia silphilitica	Great blue lobelia	1.50
Mimulus ringens	Monkeyflower	1.75
Panicum virgatum	Switch grass	2.50
Rudbeckia laciniata	Wild golden glow	0.75
Scirpus atrovirens	Dark green rush	6.00
Spartina pectinata	Prairie cord grass	4.00
TOTAL		70.50 oz/acre
	=	4.41 lbs/acre

TEMPORARY COVER COMPONENT

Scientific Name	Common Name	(ounces/acre)
Agrostis alba	Redtop	16.00
Elymus hystrix	Eastern bottlebrush grass	64.00
Lolium multiflorum	Annual rye	400.00
TOTAL		480.00 oz/acre
	=	30.00 lbs/acre

Bareroot Trees (625 trees/acre)

Scientific Name	Common Name	Quantity
Acer saccharinum	Silver maple	25
Betula nigra	River birch	25
Fraxinus pennsylvanica	Green ash	50
Quercus palustris	Pin oak	25
	TOTAL	125

Drainage Channel (PFO/SS) Side Slope Impact Area (0.03 acre)

Slope Stabilization Mix (36.00 pounds/acre)

NATIVE COMPONENT

Scientific Name	Common Name	Ounces/Acre
Andropogon gerardii	Big bluestem	20.00
Andropogon scoparius	Little bluestem	32.00
Bouteloua curtipendula	Side-oats grama	3.00
Elymus canadensis	Canada wild-rye	5.00
Panicum virgatum	Switch grass	12.00
Sorghastrum nutans	Indian grass	24.00
TOTAL		96.00 ounces/acre
	=	6.00 pounds/acre

TEMPORARY COVER COMPONENT

Scientific Name	Common Name	Ounces/Acre
Agrostis alba	Redtop	16.00
Elymus hystrix	Eastern bottlebrush grass	64.00
Lolium multiflorum	Annual rye	400.00
TOTAL		480.00 ounces/acre
	=	30.00 pounds/acre

Bareroot Shrubs (3,333 shrubs/acre)

Scientific Name	Common Name	Quantity
Cornus amomum	Silky dogwood	50
Salix discolor	Pussy willow	50
	TOTAL	100

Transition Zone Impact Area (0.18 acre)

Slope Stabilization Mix (36.00 pounds/acre)

NATIVE COMPONENT

Scientific Name	Common Name	Ounces/Acre
Andropogon gerardii	Big bluestem	20.00
Andropogon scoparius	Little bluestem	32.00
Bouteloua curtipendula	Side-oats grama	3.00
Elymus canadensis	Canada wild-rye	5.00
Panicum virgatum	Switch grass	12.00
Sorghastrum nutans	Indian grass	24.00
TOTAL		96.00 ounces/acre

Bareroot Trees (833 trees/acre)

Scientific Name	Common Name	Quantity
Acer saccharum	Sugar maple	25
Juglans nigra	Black walnut	25
Liriodendron tulipfera	Tulip tree	50
Quercus rubra	Northern red oak	50
	TOTAL	150

SITE PHOTOGRAPHS

Photographs were taken of the site prior to and during planting activities (Ref. Appendix D). A description of each photograph is provided.

GENERAL PERMIT CONDITION COMPLIANCE

Each applicable permit condition is presented below along with a brief summary of how it was addressed or completed during initial wetland restoration activities. Special Conditions 1 through 11 pertain to wetland restoration construction activities while 12 though 17 are applicable to future monitoring and development of the restored areas.

Special Condition 1
The primary objective of the project is to address site remediation. All USEPA and NJDEP Site Remediation Program requirements will be adhered to and incorporated into project activities.

Special Condition 2
No grading or construction activities were conducted along the Rockaway River between the dates of March 15 and June 15. All activities in applicable areas were completed immediately upon permit issuance. Appropriate county approved erosion control measures were installed prior to March 15.

Special Condition 3
All backfill soils consisted of clean, suitable material free from toxic pollutants in toxic amounts.

Special Condition 4
The additional wetland transition zone was incorporated into restoration boundaries and was planted with the same vegetation species as the remaining transition zone on site.

Special Condition 5
The restoration was completed concurrently with remediation project activities.

Special Condition 6
Wetland restoration activities were completed in accordance with the permitted plan sheets, prepared and submitted by RMT, Inc., dated February 21, 2005.

Special Condition 7
NJDEP LURP wetland mitigation staff members were contacted regarding the pre-construction meeting. However, due to the time sensitive nature of the project (to initiate remedial actions prior to the March 15 trout stream timing restriction), it was decided by all involved entities to forgo this meeting and initiate remedial actions.

Special Condition 8
The mitigation designer, JFNew, was present during the critical stages of construction of the restoration areas. After inspecting the areas, no changes to site conditions or plans were deemed necessary.

Special Condition 9
A disc was scheduled to be run across the restoration areas prior to planting. However, due to the minimal compaction of the soil and the fact that there was notable recent rainfall, JFNew advised that a disc was not to be run over the area. This would have resulted in rutting of the soil and no net gain to the planting medium due to the heavily saturated conditions.

Special Condition 10
A post-grading construction meeting was held with NJDEP LURP, RMT, and JFNew staff on June 24, 2005 as previously described (Appendix A).

Special Condition 11
This report comprises and satisfies the wetland mitigation construction final report requirement.

11a. The Wetland Mitigation Project Completion of Construction Form is attached (Appendix E).
11b. The as-built survey coordinates table is attached (Appendix B). Final grades are shown on Figure 2. Actual planting quantities are presented in the preceding "Planting Plan" section, and also shown on Figure 2.
11c. The 3 inch white PVC was erected along the edge of the wetland and transition zone areas as specified. They are visible in the site photographs (Appendix D), are shown on Figure 2, and will remain on site throughout the five-year monitoring period.
11d. Photos of the wetland restoration areas are enclosed (Appendix D).
11e. The six soil profile descriptions were provided in the preceding "Soil Preparation and Grading" section, and are shown on Figure 2. The soil profiles illustrate that suitable soils were spread across the entire wetland restoration and transition zone areas.
11f. The soil test results demonstrated that the subject topsoil used in the restoration and transition zone areas contains 12.6% organic content (Appendix C). This meets the minimum permit requirements.
11g. The wetland and transition zone restoration areas were posted with permanent signs as required. These signs are evident in the site photographs (Appendix D), and are shown on Figure 2.

11h. The permanent signs contain all required and pertinent data specified in the permit. Specifically, the signs read:

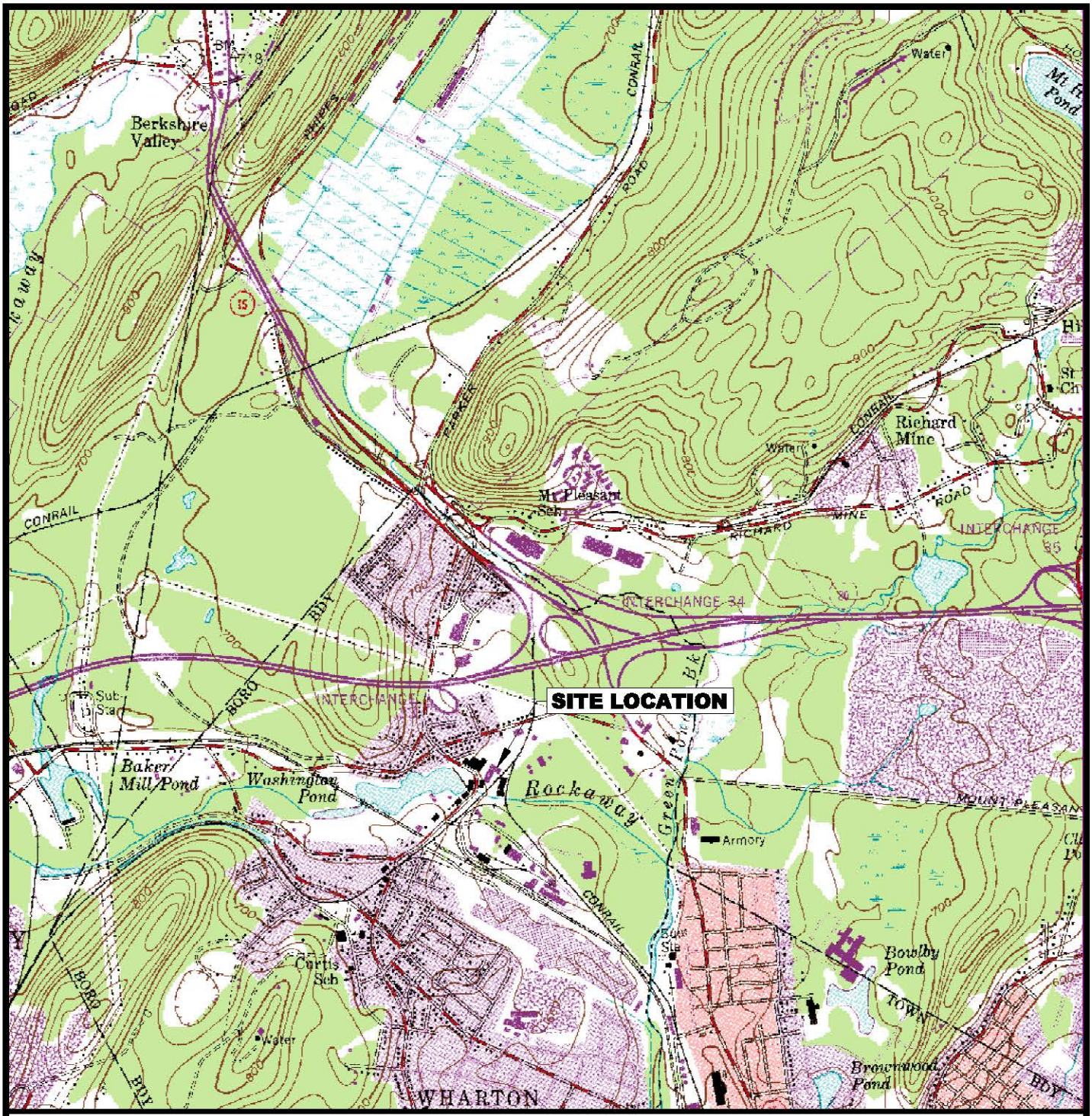
WETLAND MITIGATION PROJECT
Mowing, cutting, dumping and draining is strictly prohibited.
L.E. Carpenter & Company
Permit No. 1439-04-0001.1 (FWW 040001)
Point of Contact: Nick Clevett, RMT, Inc., (616) 975-5415

SUMMARY

Based on permit requirements and proposed restoration activities, the subject ±0.60 acre of wetland and associated transition zone restoration construction was successfully completed. Suitable soils were placed across the site, an appropriate hydrologic regime is fully anticipated based on observed conditions and as-built survey results, and plant species were successfully installed across the subject areas. No further action is required at this time. The first annual monitoring event will be conducted in 2005 with a monitoring report to be submitted to the NJDEP LURP by no later than December 31, 2005.

Figures

RMT COMPUTER AIDED DESIGN AND DRAFTING



NEW JERSEY

QUADRANGLE LOCATION

N

0 2000' 4000'

APPROXIMATE SCALE IN FEET

SOURCE

BASE MAP DEVELOPED FROM THE DOVER, NEW JERSEY 7.5 MINUTE U.S.G.S. TOPOGRAPHIC QUADRANGLE MAP, DATED 1954, PHOTOREVISED 1981.

RMT INC.

LE CARPENTER
WHARTON, NEW JERSEY

SITE LOCATION MAP
2nd QUARTER 2005

DRAWN BY:	SJL
APPROVED BY:	JO
PROJECT NUMBER:	6527.10
FILE NUMBER:	6527.10.11.DWG
DATE:	JUNE 2005

FIGURE 1

PLOT DATA
Drawing Name: J:\06527\10\6527.10.11.dwg
Operator Name: Scale: lucidos 1"=2000'
Dwg Size: Plot Date: 87506 Byrds Monday, June 20, 2005
Plot Time: Attached Xref's: 09:33:1541 AM No xref's Attached.

EMERGENT WETLAND (PEM) SEED MIX (0.19 acre)

NATIVE COMPONENT

Scientific Name	Common Name	Ounces/Acre
Acorus calamus	Sweet flag	8.50
Alisma subcordatum	Common water plantain	8.00
Echinochloa crusgalli	Barnyard grass	12.00
Eleocharis obtusa	Blunt spike rush	3.00
Iris virginica shrevei	Blue flag iris	4.00
Juncus effusus	Soft rush	3.00
Leersia oryzoides	Rice cut grass	4.00
Lobelia cardinalis	Cardinal flower	0.75
Lobelia siphilitica	Great blue lobelia	1.00
Mimulus ringens	Monkey flower	2.00
Peltandra virginica	Arrow arum	16.00
Polygonum pensylvanicum	Pinkweed	6.00
Pontederia cordata	Pickerelweed	8.00
Sagittaria latifolia	Common arrowhead	8.00
Scirpus validus	Softstem bulrush	6.00
Sparganium eurycarpum	Common burreed	10.00
		TOTAL 100.25 oz/acre
		= 6.27 lbs/acre

TEMPORARY COVER COMPONENT

Scientific Name	Common Name	Ounces/Acre
Agrostis alba	Redtop	16.00
Lolium multiflorum	Annual rye	400.00
		TOTAL 416.00 oz/acre
		= 26.00 lbs/acre

SLOPE STABILIZATION SEED MIX (0.21 acre)

NATIVE COMPONENT

Scientific Name	Common Name	Ounces/Acre
Andropogon gerardii	Big bluestem	20.00
Andropogon scoparius	Little bluestem	32.00
Bouteloua curtipendula	Side-oats grama	3.00
Elymus canadensis	Canada wild-rye	5.00
Panicum virgatum	Switch grass	12.00
Sorghastrum nutans	Indian grass	24.00
		TOTAL 96.00 oz/acre
		= 6.00 lbs/acre

TEMPORARY COVER COMPONENT

Scientific Name	Common Name	Ounces/Acre
Agrostis alba	Redtop	16.00
Elymus hystrix	Eastern bottlebrush grass	64.00
Lolium multiflorum	Annual rye	400.00
		TOTAL 480.00 oz/acre
		= 30.00 lbs/acre

WOODED WETLAND UNDERSTORY SEED MIX (0.20 acre)

NATIVE COMPONENT

Scientific Name	Common Name	Ounces/Acre
Actinomeris alternifolia	Wingstem	1.00
Alisma subcordatum	Common water plantain	3.00
Aster umbellatus	Flat-top aster	1.25
Bidens cernua	Nodding bur marigold	3.00
Calamagrostis canadensis	Blue joint grass	3.00
Carex crinita	Fringed sedge	2.00
Carex hystericina	Porcupine sedge	4.00
Carex lupulina	Common hop sedge	4.00
Carex vulpinoidea	Fox sedge	6.00
Chelone glabra	Turtlehead	1.25
Elymus canadensis	Canada wild rye	6.00
Elymus virginicus	Virginia wild rye	12.00
Glyceria striata	Fowl manna grass	4.00
Helenium autumnale	Sneezeweed	1.50
Leersia oryzoides	Rice cut grass	2.00
Lobelia silphilitica	Great blue lobelia	1.50
Mimulus ringens	Monkeyflower	1.75
Panicum virgatum	Switch grass	2.50
Rudbeckia laciniata	Wild golden glow	0.75
Scirpus atrovirens	Dark green rush	6.00
Spartina pectinata	Prairie cord grass	4.00
	TOTAL	70.50 oz/acre
		= 4.41 lbs/acre

TEMPORARY COVER COMPONENT

Scientific Name	Common Name	Ounces/Acre
Agrostis alba	Redtop	16.00
Elymus hystrix	Eastern bottlebrush grass	64.00
Lolium multiflorum	Annual rye	400.00
		TOTAL 480.00 oz/acre
		= 30.00 lbs/acre

BARE ROOT TREES (PFO/SS WETLAND) (0.20 acre)

Scientific Name	Common Name	Quantity
Acer saccharinum	Silver maple	25
Betula nigra	River birch	25
Fraxinus pennsylvanica	Green Ash	50
Quercus palustris	Pin oak	25
	TOTAL	125

BARE ROOT SHRUBS (CHANNEL SLOPE STABILIZATION) (0.03 acre)

Scientific Name	Common Name	Quantity
Cornus obliqua	Silky Dogwood	50
Salix discolor	Pussy Willow	50
	TOTAL	100

BARE ROOT TREES (TRANSITION ZONE) (0.18 acre)

Scientific Name	Common Name	Quantity
Acer saccharum	Sugar Maple	25
Juglans nigra	Black Walnut	25
Liriodendron tulipfera	American elm	50
Quercus rubra	Northern red oak	50
	TOTAL	150

LEGEND

- APPROXIMATE PROPERTY LINE
- FENCE LINE
- TREES
- 630 FINAL GRADE CONTOUR LINE
- PVC-1 WETLAND RESTORATION AND TRANSITION ZONE BOUNDARY POINTS MARKED IN THE FIELD WITH 3-foot LENGTHS OF 3-inch WHITE PVC; LURP Special Condition 11c
- BORING 1 BORING 1: NJDEP LURP REQUIRED SOIL BORINGS, Permit Condition 11e
- AREA OF SOURCE REDUCTION DISTURBANCE OUTSIDE OF REGULATED WETLAND AREA
- STATE OPEN WATERS
- WETLAND BOUNDARY
- LIMITS SOURCE REDUCTION PCB EXCAVATION WITHIN REGULATED WETLAND AREA
- PEM (EMERGENT WETLAND)
- PFO / SS (FORESTED / SCRUB-SHRUB WETLAND)
- PFO / SS IMPACT (0.23 ACRE)
- PEM IMPACT (0.19 ACRE)
- TRANSITION ZONE IMPACT (0.18 ACRE)

SAMPLE OR MONITORING LOCATION AND NUMBER

MW-21 MONITORING WELL LOCATION AND NUMBER

WETLAND SIGN LOCATION

W WETLAND MITIGATION PROJECT SIGN

NOTES

1. BASE MAP DEVELOPED FROM TOPOGRAPHIC SURVEY PROVIDED BY JAMES M. STEWART, INC. LAND SURVEYORS, DRAWING NO 2793-03.DWG, DATED 02-14-02.
2. TOTAL PROPOSED WETLAND IMPACT 0.42 ACRE.
3. PROPOSED DENSITY FOR TREE RESTORATION IS 10' ON CENTER.

N

0 30' 60' 90' 120'
SCALE IN FEET

JFNew
600 S. Beacon, Grand Haven, MI 49417
(616) 847-1680/ Fax (616) 847-9970
www.jfnew.com

NO.	BY	DATE	REVISION	APP'D.
5.				
4.				
3.				
2.				
1.				

L.E. CARPENTER
WHARTON, NEW JERSEY

ASBUILT
WETLAND RESORATION MAP

DRAWN BY: SJL	SCALE: SHOWN	PROJECT NO. 6527.16	
CHECKED BY: NC		FILE NO. 6527.16.01.DWG	
APPROVED BY:	DATE PRINTED:	FIGURE 2	
DATE: AUGUST 2005			

RMT INC.
1143 HIGHLAND DRIVE, SUITE B
ANN ARBOR, MI. 48108-2237
PHONE: 313-971-7080
FAX: 313-971-9022

RMT COMPUTER AIDED DESIGN AND DRAFTING

PLOT DATA
Drawing Name: J:\06527\16\6527.16.01.dwg
Operator Name: lucidos
Scale: 1"=30'
Dwg Size: 857882 Bytes
Plot Date: Tuesday, August 16, 2005
Plot Time: 3:43.2375 PM
Attached Xref's: No xref's Attached.

Appendices

JFNew

Appendix A:

Letter Summary of Wetland Restoration Post-Grading Construction Meeting

JFNew

Integrated
Environmental
Solutions

2025 East Beltline Ave. SE
Suite 402
Grand Rapids, MI 49546
Telephone: 616-975-5415
Fax: 616-975-1098

June 30, 2005

Ms. Jill Aspinwall
Case Manager
New Jersey Department of Environmental Protection
Land Use Regulation Program
501 East State Street, 2nd Floor
Post Office Box 439
Trenton, NJ 08625-0439

Subject: L.E. Carpenter & Company, Wharton, Morris County, New Jersey
Wetland Restoration Project
File No. 1439-04-0001.1 (FWW 040001)
June 24, 2005 Post Final Grade Construction Meeting

Dear Ms. Aspinwall:

It was a pleasure meeting both yourself and Jo Dale Legg at the L.E. Carpenter & Company (LEC) site on June 24, 2005, for the post final grade construction meeting. Our meeting on June 24, 2005, satisfies Special Condition No. 10 of the New Jersey Department of Environmental Protection (NJDEP) Land Use Regulation Program (LURP) Freshwater Wetlands Statewide General Permit (GP4) File No. 1439-04-0001.1 (FWW 040001) issued on February 25, 2005, by Mr. Mark A. Godfrey (Supervisor, Bureau of Inland Regulation, Morris and Bergen Counties Region). As we discussed at the site, find outlined in this letter the issues agreed upon relating to the approved wetlands restoration plan.

1. NJDEP LURP approved the substitution of the following tree and shrub species where necessary based on nursery availability:
   - Pussy Willow (*Salix discolor*) will replace Sandbar Willow (*Salix exigua*)
   - Green Ash (*Fraxinus pennsylvanica*) will replace Red Maple (*Acer rubra*)
   - Black Walnut (*Juglans nigra*) will replace American Elm (*Ulmus americana*)
2. NJDEP LURP agreed that the analytical data provided by the borrow source (Bendendorf Landscaping) for the top soil (Brown #1; 12.6% organic content) used to establish final grade in both the wetland and transition areas was adequate to satisfy the Total Organic Content (TOC) sampling and analyses required under Special Condition 11f of the permit. Per your request, the borrow source analytical data has been attached.
3. NJDEP LURP preferred the use of 3 feet (ft) tall versus 4 ft tall (Special Condition 11c) PVC stickups to demark the wetland, and only required 3 segments placed to demark the LEC/wetland boundary. Documentation of the type, size and placement of these demarcation points will be presented in the Final Report summarizing wetland and transition zone restoration activities (Ref. Special Permit Condition No. 11). This report will be submitted to NJDEP LURP within 30 days following completion of the restoration activities.

4. Wetland and transition zone boundary survey coordinates will be provided to NJDEP LURP.
5. The wetland area does not require deed restriction, as the property is not owned by LEC.
6. Natural recruitment of native tree species will count toward mitigation success. A successful restoration will be determined by the total number of trees present at the end of the monitoring period (5 years). However, notes will be taken during the semiannual monitoring events differentiating between planted trees and volunteers to aid in determining planted tree species survival rates.
7. RMT will evaluate the NJ regulatory requirements regarding the use of pesticides to control invasive species near surface water bodies prior to the use of chemical applications. We will keep you informed as to the requirements deemed applicable at the LEC site, and potential actions taken if applicable.
8. RMT understands that NJDEP LURP agrees in the use of the *Galerucella sp.* beetle in controlling the spread of Purple loosestrife (*Lythrum salicaria*) into the newly restored wetland area. RMT will contact you prior to release, with the planned release to occur in Spring 2006.
9. RMT understands that you will be the primary point of contact for all LEC wetland restoration, monitoring and reporting activities. Please use me as your primary RMT point of contact. I have enclosed a business card for your convenience.

Again, thank you for your time, and please feel free to contact me at your convenience with any questions.

Sincerely,

RMT, Inc.

Nicholas J. Clevett
Senior Project Manager

Attachments: Top Soil (Brown #1) Analytical Data

cc: Cris Anderson, LEC
Ernie Schaub, LEC
Jim Lewis, LEC
Anthony Cinque, NJDEP
Steve Cipot, USEPA
Dan Oman, RMT
Jim Dexter, RMT
Brian Majka, JFNew
Kelly Rice, JFNew
Steve Rice, JFNew
Central Files

Bendendorf Landscaping
Route 46
Mine Hill,NJ 07847

re: Our No. 8646

Gentlemen:

Enclosed are the test results for the topsoil samples delivered June 6,1997. The N.J.D.O.T. spec. is for comparison.

		N.J.D.O.T.	Our Topsoil Brown #1	Black #2
			% Passing Dry Weight	
Sand	2.0-.05mm	40%-80%	55	64
Silt	.05-.005mm	0%-30%	19	28
Clay	<.005mm	0%-30%	6	8
pH		5.8-6.5	6.6	5.8
Organic		2.75*	12.6	57.7-high
Delivered Water Content%			24.3	125.6

Note: The Sand size particles for sample #2 include organic material.

Very truly yours,

John C. Mahle, Jr., P.E.

Appendix B:

Survey Coordinate Table

JFNew

NJDEP LURP File No
1439-04-0001.1 [FWW 040001]

L.E. CARPENTER AND COMPANY
Borough of Wharton, Morris County, New Jersey
Source Reduction Wetland Impact Specific Survey Coordinate Table

Survey Coordinate No.	Professional Survey Information *New Jersey State Plan NAD83 and NGVD88 Established By GPS Survey Opus Solution 12/03/04*			LEC Point ID	LEC Point Description
	North (Y) FT	East (X) FT	Elevation FT		
761	754154.90	471288.07	627.01	SILT_FENCE	PCB EXCAVATION EXTENT
762	754156.39	471311.12	626.53	SILT_FENCE	PCB EXCAVATION EXTENT
763	754157.17	471336.43	626.87	SILT_FENCE	PCB EXCAVATION EXTENT
764	754152.85	471360.35	624.65	SILT_FENCE	PCB EXCAVATION EXTENT
765	754154.07	471370.52	625.06	SILT_FENCE	PCB EXCAVATION EXTENT
766	754149.03	471402.32	624.65	SILT_FENCE	PCB EXCAVATION EXTENT
767	754149.10	471424.17	625.06	SILT_FENCE	PCB EXCAVATION EXTENT
768	754153.34	471447.12	624.35	SILT_FENCE	PCB EXCAVATION EXTENT
769	754159.43	471473.78	623.88	SILT_FENCE	PCB EXCAVATION EXTENT
770	754162.62	471475.75	624.10	SILT_FENCE	PCB EXCAVATION EXTENT
771	754188.16	471482.60	624.55	SILT_FENCE	PCB EXCAVATION EXTENT
772	754207.92	471492.46	624.69	SILT_FENCE	PCB EXCAVATION EXTENT
773	754227.06	471495.56	624.63	SILT_FENCE	PCB EXCAVATION EXTENT
774	754246.63	471502.52	624.67	SILT_FENCE	PCB EXCAVATION EXTENT
775	754263.36	471505.66	624.30	SILT_FENCE	PCB EXCAVATION EXTENT
776	754274.30	471502.93	624.09	SILT_FENCE	PCB EXCAVATION EXTENT
777	754292.93	471481.86	623.94	SILT_FENCE	PCB EXCAVATION EXTENT
778	754273.93	471502.77	624.16	SILT_FENCE	PCB EXCAVATION EXTENT
779	754298.38	471456.51	624.49	SILT_FENCE	PCB EXCAVATION EXTENT
780	754289.75	471440.72	624.34	SILT_FENCE	PCB EXCAVATION EXTENT
781	754278.80	471414.21	624.82	SILT_FENCE	PCB EXCAVATION EXTENT
782	754264.27	471391.35	624.78	SILT_FENCE	PCB EXCAVATION EXTENT
783	754266.03	471374.10	624.91	SILT_FENCE	PCB EXCAVATION EXTENT
784	754262.58	471362.56	624.49	SILT_FENCE	PCB EXCAVATION EXTENT
785	754261.04	471341.61	625.36	SILT_FENCE	PCB EXCAVATION EXTENT
1240	754212.43	471298.54	625.60	FINAL TEMP	FINAL GRADE POINT
1241	754544.56	471124.71	631.03	FINAL ED PAV	FINAL GRADE POINT
1242	754493.00	471156.37	630.58	FINAL ED PAV	FINAL GRADE POINT

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	North (Y) FT	East (X) FT	Elevation FT		
1243	754449.49	471181.14	630.02	FINAL ED PAV	FINAL GRADE POINT
1244	754412.27	471203.67	629.63	FINAL ED PAV	FINAL GRADE POINT
1245	754404.54	471195.19	629.80	FINAL ED PAV	FINAL GRADE POINT
1246	754393.95	471202.28	629.78	FINAL ED PAV	FINAL GRADE POINT
1247	754381.36	471212.07	629.68	FINAL ED PAV	FINAL GRADE POINT
1248	754382.16	471219.89	629.56	FINAL ED PAV	FINAL GRADE POINT
1249	754371.51	471226.33	629.42	FINAL ED PAV	FINAL GRADE POINT
1250	754368.21	471212.97	629.58	FINAL ED PAV	FINAL GRADE POINT
1251	754378.20	471198.21	629.76	FINAL ED PAV	FINAL GRADE POINT
1252	754383.37	471177.86	629.87	FINAL ED PAV	FINAL GRADE POINT
1253	754399.79	471154.66	630.23	FINAL ED PAV	FINAL GRADE POINT
1254	754416.19	471129.26	630.39	FINAL ED PAV	FINAL GRADE POINT
1255	754409.45	471109.05	630.43	FINAL ED PAV	FINAL GRADE POINT
1256	754398.57	471101.36	630.39	FINAL ED PAV	FINAL GRADE POINT
1257	754397.90	471090.35	630.57	FINAL ED PAV	FINAL GRADE POINT
1258	754383.15	471088.52	630.55	FINAL ED PAV	FINAL GRADE POINT
1259	754369.85	471070.15	630.58	FINAL ED PAV	FINAL GRADE POINT
1260	754369.16	471060.78	630.73	FINAL ED PAV	FINAL GRADE POINT
1261	754382.63	471051.56	631.04	FINAL ED PAV	FINAL GRADE POINT
1262	754394.22	471055.27	631.11	FINAL ED PAV	FINAL GRADE POINT
1263	754405.70	471048.36	631.22	FINAL ED PAV	FINAL GRADE POINT
1264	754414.68	471047.58	631.22	FINAL ED PAV	FINAL GRADE POINT
1265	754432.57	471021.80	631.68	FINAL ED PAV	FINAL GRADE POINT
1266	754464.03	471048.64	631.17	FINAL ED PAV	FINAL GRADE POINT
1267	754476.38	471059.66	630.87	FINAL ED PAV	FINAL GRADE POINT
1268	754497.93	471081.08	630.67	FINAL ED PAV	FINAL GRADE POINT
1269	754503.19	471088.64	630.73	FINAL ED PAV	FINAL GRADE POINT

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	North (Y) FT	East (X) FT	Elevation FT		
1270	754505.53	471099.80	630.74	FINAL ED PAV	FINAL GRADE POINT
1271	754517.61	471101.72	630.70	FINAL ED PAV	FINAL GRADE POINT
1272	754499.92	471124.93	630.79	FINAL PAVE	FINAL GRADE POINT
1273	754472.95	471103.69	630.89	FINAL PAVE	FINAL GRADE POINT
1274	754443.45	471075.52	630.97	FINAL PAVE	FINAL GRADE POINT
1275	754405.60	471071.09	631.04	FINAL PAVE	FINAL GRADE POINT
1276	754425.77	471099.97	630.70	FINAL PAVE	FINAL GRADE POINT
1277	754443.07	471127.92	630.66	FINAL PAVE	FINAL GRADE POINT
1278	754455.64	471151.61	630.59	FINAL PAVE	FINAL GRADE POINT
1279	754429.37	471159.03	630.37	FINAL PAVE	FINAL GRADE POINT
1280	754411.19	471176.00	630.04	FINAL PAVE	FINAL GRADE POINT
1281	754393.24	471184.62	629.94	FINAL PAVE	FINAL GRADE POINT
1282	754344.22	471240.80	629.21	FINAL TS	FINAL GRADE POINT
1283	754325.79	471216.27	629.05	FINAL TS	FINAL GRADE POINT
1284	754319.43	471182.42	628.62	FINAL TS	FINAL GRADE POINT
1285	754320.30	471152.41	628.79	FINAL TS	FINAL GRADE POINT
1286	754318.80	471127.47	629.11	FINAL TS	FINAL GRADE POINT
1287	754307.91	471112.97	628.56	FINAL TS	FINAL GRADE POINT
1288	754306.18	471088.57	628.71	FINAL TS	FINAL GRADE POINT
1289	754318.87	471063.81	629.79	FINAL TS	FINAL GRADE POINT
1290	754328.02	471054.21	630.01	FINAL TS	FINAL GRADE POINT
1291	754336.33	471023.02	630.58	FINAL TS	FINAL GRADE POINT
1292	754345.72	470994.25	631.09	FINAL TS	FINAL GRADE POINT
1293	754342.56	470980.22	631.45	FINAL TS	FINAL GRADE POINT
1294	754333.40	470957.40	632.41	FINAL TS	FINAL GRADE POINT
1295	754310.78	470934.46	632.89	FINAL TS	FINAL GRADE POINT
1296	754291.40	470909.26	633.40	FINAL TS	FINAL GRADE POINT

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	North (Y) FT	East (X) FT	Elevation FT		
1297	754278.03	470895.67	633.31	FINAL TS	FINAL GRADE POINT
1298	754262.22	470877.77	634.25	FINAL TS	FINAL GRADE POINT
1299	754240.91	470858.02	634.80	FINAL TS	FINAL GRADE POINT
1300	754225.43	470843.54	635.31	FINAL TS	FINAL GRADE POINT
1301	754209.14	470838.11	635.29	FINAL TS	FINAL GRADE POINT
1302	754190.32	470844.39	634.50	FINAL TS	FINAL GRADE POINT
1303	754168.91	470852.81	633.27	FINAL TS	FINAL GRADE POINT
1304	754168.76	470852.93	633.27	FINAL TS	FINAL GRADE POINT
1305	754154.33	470866.79	632.30	FINAL TS	FINAL GRADE POINT
1306	754139.37	470883.84	631.55	FINAL TS	FINAL GRADE POINT
1307	754130.75	470900.23	631.44	FINAL TS	FINAL GRADE POINT
1308	754120.06	470921.57	631.47	FINAL TS	FINAL GRADE POINT
1309	754118.90	470950.58	631.10	FINAL TS	FINAL GRADE POINT
1310	754118.39	470979.23	632.16	FINAL TS	FINAL GRADE POINT
1311	754119.58	471004.85	632.57	FINAL TS	FINAL GRADE POINT
1312	754119.61	471032.94	632.44	FINAL TS	FINAL GRADE POINT
1313	754122.96	471060.63	631.72	FINAL TS	FINAL GRADE POINT
1314	754116.29	471084.57	632.00	FINAL TS	FINAL GRADE POINT
1315	754115.26	471104.77	631.65	FINAL TS	FINAL GRADE POINT
1316	754101.79	471110.19	631.91	FINAL TS	FINAL GRADE POINT
1317	754087.81	471110.78	632.05	FINAL TS	FINAL GRADE POINT
1318	754081.31	471110.59	631.57	FINAL TS	FINAL GRADE POINT
1319	754079.26	471101.54	632.04	FINAL TS	FINAL GRADE POINT
1320	754071.90	471089.60	632.13	FINAL TS	FINAL GRADE POINT
1321	754064.62	471085.56	632.12	FINAL TS	FINAL GRADE POINT
1322	754061.67	471078.07	632.30	FINAL TS	FINAL GRADE POINT
1323	754057.54	471066.57	631.34	FINAL TS	FINAL GRADE POINT

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Borough of Wharton, Morris County, New Jersey
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	North (Y) FT	East (X) FT	Elevation FT		
1324	754047.22	471065.91	629.03	FINAL BS	FINAL GRADE POINT
1325	754048.11	471080.48	628.41	FINAL BS	FINAL GRADE POINT
1326	754048.16	471088.56	628.37	FINAL BS	FINAL GRADE POINT
1327	754056.98	471095.56	628.23	FINAL BS	FINAL GRADE POINT
1328	754059.59	471112.15	627.89	FINAL BS	FINAL GRADE POINT
1329	754062.94	471121.85	628.18	FINAL BS	FINAL GRADE POINT
1330	754071.40	471119.66	628.74	FINAL BS	FINAL GRADE POINT
1331	754073.08	471133.21	628.40	FINAL BS	FINAL GRADE POINT
1332	754084.08	471145.62	629.01	FINAL BS	FINAL GRADE POINT
1333	754104.33	471148.08	629.24	FINAL BS	FINAL GRADE POINT
1334	754122.30	471146.42	628.68	FINAL BS	FINAL GRADE POINT
1335	754145.83	471130.62	628.36	FINAL BS	FINAL GRADE POINT
1336	754146.46	471101.99	628.77	FINAL BS	FINAL GRADE POINT
1337	754145.86	471078.36	628.70	FINAL BS	FINAL GRADE POINT
1338	754145.69	471043.33	629.21	FINAL BS	FINAL GRADE POINT
1339	754146.15	471011.18	629.13	FINAL BS	FINAL GRADE POINT
1340	754148.06	470984.44	629.25	FINAL BS	FINAL GRADE POINT
1341	754148.75	470953.77	629.01	FINAL BS	FINAL GRADE POINT
1342	754144.68	470927.68	629.07	FINAL BS	FINAL GRADE POINT
1343	754142.39	470909.17	628.82	FINAL BS	FINAL GRADE POINT
1344	754149.79	470903.07	628.87	FINAL BS	FINAL GRADE POINT
1345	754162.89	470894.84	628.95	FINAL BS	FINAL GRADE POINT
1346	754182.41	470887.33	628.74	FINAL BS	FINAL GRADE POINT
1347	754198.68	470888.43	629.16	FINAL BS	FINAL GRADE POINT
1348	754225.89	470894.66	629.36	FINAL BS	FINAL GRADE POINT
1349	754246.73	470905.74	629.02	FINAL BS	FINAL GRADE POINT
1350	754262.19	470919.74	629.06	FINAL BS	FINAL GRADE POINT

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	North (Y) FT	East (X) FT	Elevation FT		
1351	754283.38	470936.70	629.01	FINAL BS	FINAL GRADE POINT
1352	754296.25	470949.17	628.64	FINAL BS	FINAL GRADE POINT
1353	754311.20	470965.20	628.56	FINAL BS	FINAL GRADE POINT
1354	754320.24	470977.14	628.48	FINAL BS	FINAL GRADE POINT
1355	754321.55	470988.32	628.52	FINAL BS	FINAL GRADE POINT
1356	754314.15	470999.98	628.42	FINAL BS	FINAL GRADE POINT
1357	754306.61	471014.13	628.10	FINAL BS	FINAL GRADE POINT
1358	754297.65	471034.45	628.09	FINAL BS	FINAL GRADE POINT
1359	754289.64	471058.40	627.59	FINAL BS	FINAL GRADE POINT
1360	754281.89	471075.23	627.27	FINAL BS	FINAL GRADE POINT
1361	754282.67	471089.62	627.21	FINAL BS	FINAL GRADE POINT
1362	754287.63	471106.11	627.13	FINAL BS	FINAL GRADE POINT
1363	754290.54	471113.74	627.04	FINAL BS	FINAL GRADE POINT
1364	754289.51	471133.77	626.59	FINAL BS	FINAL GRADE POINT
1365	754285.12	471160.04	626.39	FINAL BS	FINAL GRADE POINT
1366	754282.83	471179.67	626.06	FINAL BS	FINAL GRADE POINT
1367	754284.93	471201.32	626.00	FINAL BS	FINAL GRADE POINT
1368	754287.63	471218.37	626.05	FINAL BS	FINAL GRADE POINT
1369	754295.17	471234.40	626.06	FINAL BS	FINAL GRADE POINT
1370	754301.08	471249.42	625.90	FINAL BS	FINAL GRADE POINT
1371	754306.75	471263.08	625.67	FINAL BS	FINAL GRADE POINT
1372	754315.73	471268.75	625.22	FINAL BS	FINAL GRADE POINT
1373	754325.91	471266.62	625.07	FINAL BS	FINAL GRADE POINT
1374	754331.42	471265.21	624.56	FINAL BS	FINAL GRADE POINT
1375	754338.57	471258.64	624.43	FINAL BS	FINAL GRADE POINT
1376	754344.39	471256.06	624.13	FINAL BS	FINAL GRADE POINT
1377	754350.03	471253.96	624.96	FINAL BS	FINAL GRADE POINT

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	North (Y) FT	East (X) FT	Elevation FT		
1378	754349.29	471258.60	624.34	FINAL GND FNC	FINAL GRADE POINT
1379	754336.80	471266.82	624.45	FINAL GND FNC	FINAL GRADE POINT
1380	754324.44	471272.86	624.70	FINAL GND FNC	FINAL GRADE POINT
1381	754301.79	471283.80	624.74	FINAL GND FNC	FINAL GRADE POINT
1382	754292.79	471288.16	624.74	FINAL GND FNC	FINAL GRADE POINT
1383	754279.12	471298.91	624.65	FINAL GND FNC	FINAL GRADE POINT
1384	754266.68	471315.54	624.93	FINAL GND FNC	FINAL GRADE POINT
1385	754261.21	471331.72	625.15	FINAL GND FNC	FINAL GRADE POINT
1386	754260.31	471352.38	625.04	FINAL GND FNC	FINAL GRADE POINT
1387	754265.65	471375.78	624.77	FINAL GND FNC	FINAL GRADE POINT
1388	754250.93	471379.78	625.26	FINAL GND	FINAL GRADE POINT
1389	754259.50	471404.18	624.58	FINAL GND	FINAL GRADE POINT
1390	754267.26	471427.08	624.33	FINAL GND	FINAL GRADE POINT
1391	754275.80	471448.44	624.27	FINAL GND	FINAL GRADE POINT
1392	754274.35	471467.24	624.72	FINAL GND	FINAL GRADE POINT
1393	754283.49	471490.36	624.83	FINAL GND	FINAL GRADE POINT
1394	754290.90	471480.29	624.03	FINAL GND	FINAL GRADE POINT
1395	754269.33	471500.17	624.48	FINAL GND	FINAL GRADE POINT
1396	754254.22	471502.43	624.94	FINAL GND	FINAL GRADE POINT
1397	754238.51	471504.29	624.42	FINAL GND	FINAL GRADE POINT
1398	754221.69	471491.23	624.98	FINAL GND	FINAL GRADE POINT
1399	754183.32	471480.16	624.61	FINAL GND FNC	FINAL GRADE POINT
1400	754156.44	471456.36	624.47	FINAL GND FNC	FINAL GRADE POINT
1401	754151.47	471420.80	625.38	FINAL GND FNC	FINAL GRADE POINT
1402	754151.32	471398.77	625.06	FINAL GND FNC	FINAL GRADE POINT
1403	754155.12	471363.87	625.12	FINAL GND FNC	FINAL GRADE POINT
1404	754157.19	471347.19	626.26	FINAL GND FNC	FINAL GRADE POINT

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	North (Y) FT	East (X) FT	Elevation FT		
1405	754155.17	471303.63	626.74	FINAL GND FNC	FINAL GRADE POINT
1406	754180.35	471305.00	626.44	FINAL Gnd	FINAL GRADE POINT
1407	754187.70	471340.38	625.82	FINAL Gnd	FINAL GRADE POINT
1408	754185.03	471374.03	625.45	FINAL Gnd	FINAL GRADE POINT
1409	754182.05	471398.47	625.23	FINAL Gnd	FINAL GRADE POINT
1410	754186.30	471436.19	625.05	FINAL Gnd	FINAL GRADE POINT
1411	754200.82	471454.49	624.92	FINAL Gnd	FINAL GRADE POINT
1412	754210.90	471427.56	625.06	FINAL Gnd	FINAL GRADE POINT
1413	754212.19	471386.29	625.07	FINAL Gnd	FINAL GRADE POINT
1414	754213.19	471344.00	625.36	FINAL Gnd	FINAL GRADE POINT
1415	754237.25	471338.83	625.23	FINAL Gnd	FINAL GRADE POINT
1416	754250.26	471314.13	625.38	FINAL Gnd	FINAL GRADE POINT
1417	754248.28	471365.19	625.11	FINAL Gnd	FINAL GRADE POINT
1418	754228.95	471377.89	625.20	FINAL Gnd	FINAL GRADE POINT
1419	754234.80	471406.31	625.15	FINAL Gnd	FINAL GRADE POINT
1420	754247.24	471436.21	624.95	FINAL Gnd	FINAL GRADE POINT
1421	754253.22	471461.21	624.91	FINAL Gnd	FINAL GRADE POINT
1422	754254.68	471475.28	624.78	FINAL Gnd	FINAL GRADE POINT
1423	754234.56	471466.68	624.81	FINAL Gnd	FINAL GRADE POINT
1424	754224.02	471426.05	625.09	FINAL Gnd	FINAL GRADE POINT
1425	754215.13	471398.85	625.20	FINAL Gnd	FINAL GRADE POINT
1426	754300.70	471270.00	625.10	FINAL Gnd	FINAL GRADE POINT
1427	754283.06	471242.26	625.50	FINAL Gnd	FINAL GRADE POINT
1428	754266.66	471208.41	625.76	FINAL Gnd	FINAL GRADE POINT
1429	754256.78	471177.70	626.09	FINAL Gnd	FINAL GRADE POINT
1430	754257.75	471153.04	626.24	FINAL Gnd	FINAL GRADE POINT
1431	754258.27	471125.76	626.53	FINAL Gnd	FINAL GRADE POINT

NJDEP LURP File No
1439-04-0001.1 [FWW 040001]

L.E. CARPENTER AND COMPANY
Borough of Wharton, Morris County, New Jersey
Source Reduction Wetland Impact Specific Survey Coordinate Table

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	North (Y) FT	East (X) FT	Elevation FT		
1432	754228.16	471129.46	626.68	FINAL Gnd	FINAL GRADE POINT
1433	754192.36	471138.11	626.67	FINAL Gnd	FINAL GRADE POINT
1434	754177.56	471149.56	626.77	FINAL Gnd	FINAL GRADE POINT
1435	754156.13	471170.28	627.72	FINAL Gnd	FINAL GRADE POINT
1436	754120.45	471191.56	628.00	FINAL Gnd	FINAL GRADE POINT
1437	754134.41	471218.93	627.67	FINAL Gnd	FINAL GRADE POINT
1438	754153.16	471213.84	627.95	FINAL Gnd	FINAL GRADE POINT
1439	754173.13	471206.10	627.27	FINAL Gnd	FINAL GRADE POINT
1440	754192.70	471198.44	626.32	FINAL Gnd	FINAL GRADE POINT
1441	754217.10	471190.96	626.19	FINAL Gnd	FINAL GRADE POINT
1442	754237.17	471184.66	626.30	FINAL Gnd	FINAL GRADE POINT
1443	754245.14	471224.51	625.67	FINAL Gnd	FINAL GRADE POINT
1444	754245.26	471224.58	625.59	FINAL Gnd	FINAL GRADE POINT
1445	754258.84	471274.62	625.25	FINAL Gnd	FINAL GRADE POINT
1446	754235.71	471282.65	625.20	FINAL Gnd	FINAL GRADE POINT
1447	754226.24	471254.44	625.57	FINAL Gnd	FINAL GRADE POINT
1448	754213.01	471223.05	625.96	FINAL Gnd	FINAL GRADE POINT
1449	754188.67	471239.02	626.53	FINAL Gnd	FINAL GRADE POINT
1450	754204.86	471269.03	625.97	FINAL Gnd	FINAL GRADE POINT
1451	754176.92	471272.86	626.55	FINAL Gnd	FINAL GRADE POINT
1452	754156.74	471253.45	627.39	FINAL Gnd	FINAL GRADE POINT
1453	754141.78	471246.85	627.31	FINAL Gnd	FINAL GRADE POINT
1454	754133.55	471263.26	627.10	FINAL Gnd	FINAL GRADE POINT
1455	754150.28	471278.54	626.91	FINAL Gnd	FINAL GRADE POINT
1456	754130.62	471271.83	627.25	FINAL Gnd FNC	FINAL GRADE POINT
1457	754105.25	471250.42	627.26	FINAL Gnd FNC	FINAL GRADE POINT
1458	754085.17	471225.96	627.23	FINAL Gnd FNC	FINAL GRADE POINT

NJDEP LURP File No
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	North (Y) FT	East (X) FT	Elevation FT		
1459	754074.93	471205.49	627.66	FINAL Gnd FNC	FINAL GRADE POINT
1460	754066.34	471173.29	627.85	FINAL Gnd FNC	FINAL GRADE POINT
1461	754058.67	471136.06	627.88	FINAL Gnd FNC	FINAL GRADE POINT
1462	754053.17	471118.70	627.95	FINAL Gnd FNC	FINAL GRADE POINT
1463	754047.82	471099.82	628.25	FINAL Gnd FNC	FINAL GRADE POINT
1464	754045.75	471054.09	629.08	FINAL Gnd FNC	FINAL GRADE POINT
1465	754052.69	471022.30	629.01	FINAL Gnd FNC	FINAL GRADE POINT
1466	754054.73	470990.35	629.46	FINAL Gnd FNC	FINAL GRADE POINT
1467	754060.79	470966.45	629.91	FINAL Gnd FNC	FINAL GRADE POINT
1468	754066.06	470949.40	628.99	FINAL Gnd FNC	FINAL GRADE POINT
1469	754070.65	470930.70	629.43	FINAL Gnd FNC	FINAL GRADE POINT
1470	754079.57	470902.46	629.15	FINAL Gnd FNC	FINAL GRADE POINT
1471	754088.37	470870.90	630.18	FINAL Gnd FNC	FINAL GRADE POINT
1472	754096.00	470844.64	631.82	FINAL Gnd FNC	FINAL GRADE POINT
1473	754100.28	470813.15	631.83	FINAL Gnd FNC	FINAL GRADE POINT
1474	754105.59	470787.90	632.07	FINAL Gnd FNC	FINAL GRADE POINT
1475	754115.54	470760.50	632.32	FINAL Gnd FNC	FINAL GRADE POINT
1476	754131.08	470752.38	632.89	FINAL Gnd FNC	FINAL GRADE POINT
1477	754145.59	470754.34	633.40	FINAL Gnd FNC	FINAL GRADE POINT
1478	754164.99	470770.28	634.09	FINAL Gnd FNC	FINAL GRADE POINT
1479	754187.70	470789.61	635.01	FINAL Gnd FNC	FINAL GRADE POINT
1480	754209.57	470810.00	636.17	FINAL Gnd FNC	FINAL GRADE POINT
1481	754237.35	470836.48	636.01	FINAL Gnd FNC	FINAL GRADE POINT
1482	754260.92	470858.88	635.49	FINAL Gnd FNC	FINAL GRADE POINT
1483	754282.48	470880.30	634.80	FINAL Gnd FNC	FINAL GRADE POINT
1484	754312.77	470908.64	634.32	FINAL Gnd FNC	FINAL GRADE POINT
1485	754338.82	470934.26	633.62	FINAL Gnd FNC	FINAL GRADE POINT

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L.E. CARPENTER AND COMPANY
Borough of Wharton, Morris County, New Jersey
Source Reduction Wetland Impact Specific Survey Coordinate Table

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	North (Y) FT	East (X) FT	Elevation FT		
1486	754362.01	470955.70	633.17	FINAL Gnd FNC	FINAL GRADE POINT
1487	754382.90	470973.00	632.54	FINAL Gnd FNC	FINAL GRADE POINT
1488	754412.40	471000.74	632.09	FINAL Gnd FNC	FINAL GRADE POINT
1489	754438.38	471024.55	631.65	FINAL Gnd FNC	FINAL GRADE POINT
1490	754403.15	471024.25	631.73	FINAL Gnd	FINAL GRADE POINT
1491	754376.27	471019.84	631.75	FINAL Gnd	FINAL GRADE POINT
1492	754356.16	471026.90	631.08	FINAL Gnd	FINAL GRADE POINT
1493	754347.18	471052.12	630.17	FINAL Gnd	FINAL GRADE POINT
1494	754340.89	471083.62	629.88	FINAL Gnd	FINAL GRADE POINT
1495	754336.05	471118.86	629.40	FINAL Gnd	FINAL GRADE POINT
1496	754366.67	471121.50	630.13	FINAL Gnd	FINAL GRADE POINT
1497	754371.38	471144.47	630.16	FINAL Gnd	FINAL GRADE POINT
1498	754356.52	471159.07	629.50	FINAL Gnd	FINAL GRADE POINT
1499	754336.47	471159.68	629.15	FINAL Gnd	FINAL GRADE POINT
1500	754344.85	471186.88	629.28	FINAL Gnd	FINAL GRADE POINT
1501	754341.31	471208.91	629.63	FINAL Gnd	FINAL GRADE POINT
1502	754105.69	471127.16	630.60	FINAL Gnd	FINAL GRADE POINT
1503	754100.26	471072.71	632.29	FINAL Gnd	FINAL GRADE POINT
1504	754066.25	471067.91	632.17	FINAL Gnd	FINAL GRADE POINT
1505	754062.78	471048.81	631.57	FINAL Gnd	FINAL GRADE POINT
1506	754072.62	471043.89	632.06	FINAL Gnd	FINAL GRADE POINT
1507	754089.80	471039.04	632.10	FINAL Gnd	FINAL GRADE POINT
1508	754096.01	471019.48	632.26	FINAL Gnd	FINAL GRADE POINT
1509	754078.46	471018.07	631.69	FINAL Gnd	FINAL GRADE POINT
1510	754079.68	470997.99	631.01	FINAL Gnd	FINAL GRADE POINT
1511	754103.52	470994.70	632.60	FINAL Gnd	FINAL GRADE POINT
1512	754100.66	470973.66	632.14	FINAL Gnd	FINAL GRADE POINT

NJDEP LURP File No
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L.E. CARPENTER AND COMPANY
Borough of Wharton, Morris County, New Jersey
Source Reduction Wetland Impact Specific Survey Coordinate Table

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	North (Y) FT	East (X) FT	Elevation FT		
1513	754078.34	470969.85	630.39	FINAL Gnd	FINAL GRADE POINT
1514	754068.16	470958.33	630.31	FINAL TOP PAD	FINAL GRADE POINT
1515	754065.93	470952.62	630.34	FINAL TOP PAD	FINAL GRADE POINT
1516	754068.65	470947.51	630.15	FINAL TOP PAD	FINAL GRADE POINT
1517	754073.49	470946.06	630.10	FINAL TOP PAD	FINAL GRADE POINT
1518	754068.30	470947.40	629.01	FINAL BOT PAD	FINAL GRADE POINT
1519	754065.79	470952.65	629.02	FINAL BOT PAD	FINAL GRADE POINT
1520	754067.30	470957.03	629.37	FINAL BOT PAD	FINAL GRADE POINT
1521	754071.88	470946.23	629.54	FINAL BOT PAD	FINAL GRADE POINT
1522	754086.61	470936.08	630.61	FINAL Gnd	FINAL GRADE POINT
1523	754105.02	470929.25	631.08	FINAL Gnd	FINAL GRADE POINT
1524	754117.11	470891.89	631.61	FINAL Gnd	FINAL GRADE POINT
1525	754100.60	470884.52	631.05	FINAL Gnd	FINAL GRADE POINT
1526	754110.57	470855.27	631.96	FINAL Gnd	FINAL GRADE POINT
1527	754135.99	470855.30	632.63	FINAL Gnd	FINAL GRADE POINT
1528	754160.12	470833.52	633.91	FINAL Gnd	FINAL GRADE POINT
1529	754137.79	470804.55	633.50	FINAL Gnd	FINAL GRADE POINT
1530	754151.97	470788.79	633.97	FINAL Gnd	FINAL GRADE POINT
1531	754172.06	470807.17	634.69	FINAL Gnd	FINAL GRADE POINT
1532	754183.97	470821.72	635.30	FINAL Gnd	FINAL GRADE POINT
1533	754205.71	470832.82	635.45	FINAL Gnd	FINAL GRADE POINT
1534	754231.51	470850.72	635.12	FINAL Gnd	FINAL GRADE POINT
1535	754181.37	470924.70	628.82	FINAL Gnd	FINAL GRADE POINT
1536	754223.95	470945.20	628.71	FINAL Gnd	FINAL GRADE POINT
1537	754262.92	470961.81	628.44	FINAL Gnd	FINAL GRADE POINT
1538	754262.28	471006.01	628.34	FINAL Gnd	FINAL GRADE POINT
1539	754230.93	471011.70	628.42	FINAL Gnd	FINAL GRADE POINT

NJDEP LURP File No
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	North (Y) FT	East (X) FT	Elevation FT		
1540	754193.78	471009.40	628.30	FINAL Gnd	FINAL GRADE POINT
1541	754186.41	471049.89	627.95	FINAL Gnd	FINAL GRADE POINT
1542	754218.99	471052.69	627.56	FINAL Gnd	FINAL GRADE POINT
1543	754253.25	471059.88	627.89	FINAL Gnd	FINAL GRADE POINT
1544	754254.16	471095.81	627.18	FINAL Gnd	FINAL GRADE POINT
1545	754225.32	471098.71	627.36	FINAL Gnd	FINAL GRADE POINT
1546	754194.96	471103.51	627.33	FINAL Gnd	FINAL GRADE POINT
1547	754166.79	471107.80	627.85	FINAL Gnd	FINAL GRADE POINT
PVC-1	754326.7	471261.3	- -	3'X 3" PVC PIPE	WETLAND RESTORATION AREA BOUNDRY POINT [LURP SPECIAL CONDITION 11C]
PVC-2	754149.8	471284.1	- -	3'X 3" PVC PIPE	WETLAND RESTORATION AREA BOUNDRY POINT [LURP SPECIAL CONDITION 11C]
PVC-3	754226.1	471289.1	- -	3'X 3" PVC PIPE	WETLAND RESTORATION AREA BOUNDRY POINT [LURP SPECIAL CONDITION 11C]
BORING 1	754293.1	471285.8	- -	SOIL PROFILE BORING	SOIL BORING LOCATION [LURP SPECIAL CONDITION 11E]
BORING 2	754234.1	471307	- -	SOIL PROFILE BORING	SOIL BORING LOCATION [LURP SPECIAL CONDITION 11E]
BORING 3	754166	471293.2	- -	SOIL PROFILE BORING	SOIL BORING LOCATION [LURP SPECIAL CONDITION 11E]
BORING 4	754185.8	471395.7	- -	SOIL PROFILE BORING	SOIL BORING LOCATION [LURP SPECIAL CONDITION 11E]
BORING 5	754254.8	471436.3	- -	SOIL PROFILE BORING	SOIL BORING LOCATION [LURP SPECIAL CONDITION 11E]
BORING 6	754070.8	471033.1	- -	SOIL PROFILE BORING	SOIL BORING LOCATION [LURP SPECIAL CONDITION 11E]

Appendix C:

Topsoil Analytical Data

JFNew

Bendendorf Landscaping
Route 46
Mine Hill,NJ 07847

re: Our No. 8646

Gentlemen:

Enclosed are the test results for the topsoil samples delivered June 6,1997. The N.J.D.O.T. spec. is for comparison.

	N.J.D.O.T.		Our topsoil Brown #1	Black #2
			% Passing Dry Weight	
Sand	2.0-.05mm	40%-80%	55	64
Silt	.05-.005mm	0%-30%	19	28
Clay	<.005mm	0%-30%	6	8
pH		5.8-6.5	6.6	5.8
Organic		2.75*	12.6	57.7-high
Delivered Water Content%			24.3	125.6

Note: The Sand size particles for sample #2 include organic material.

Very truly yours,

John C. Mahle, Jr., P.E.

Appendix D:

Site Photographs

JFNew

Photo 1. View looking south from northwest corner of planting area.

Photo 2. View looking southeast from northwest corner of planting area.

Site Photographs
June 28, 2005
L.E. Carpenter & Company
Wetland Restoration Area
Wharton, Morris County, Michigan

JFNew # 040229

JFNew
11181 Marwill Avenue, West Olive, MI 49460
Phone 616-847-1680 / Fax 616-847-9970
www.jfnew.com

Photo 3. View looking east/southeast at wooded wetland from center of transition zone.

Photo 4. View looking southwest from center of transition zone.

Site Photographs
June 28, 2005
L.E. Carpenter & Company
Wetland Restoration Area
Wharton, Morris County, Michigan

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Photo 5. View looking northwest from north edge of transition zone.

Photo 6. View looking north/northwest from north edge of transition zone.

Site Photographs
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L.E. Carpenter & Company
Wetland Restoration Area
Wharton, Morris County, Michigan

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Photo 7. View looking southwest from center of transition zone.

Photo 8. View looking southwest from west edge of transition zone. PVC marker is evident.

Site Photographs
June 28, 2005
L.E. Carpenter & Company
Wetland Restoration Area
Wharton, Morris County, Michigan

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Photo 9. View looking northeast from point outside and west of the planting zone.

Photo 10. View looking northwest from west edge of transition zone.

Site Photographs
June 28, 2005
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Wharton, Morris County, Michigan

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Photo 11. View looking southwest at small transition zone area (0.02 acre).

Photo 12. View looking east into planting area from point west of transition zone.

Site Photographs
June 28, 2005
L.E. Carpenter & Company
Wetland Restoration Area
Wharton, Morris County, Michigan

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Appendix E:

Wetland Mitigation Project
Completion of Construction Form

JFNew

WETLAND MITIGATION PROJECT
COMPLETION OF CONSTRUCTION FORM

THE COMPLETION OF THIS FORM IS A REQUIREMENT OF THE NJDEP AUTHORIZATION OF A WETLAND MITIGATION PROJECT. THIRTY DAYS FOLLOWING THE COMPLETION OF CONSTRUCTION OF THE WETLAND MITIGATION PROJECT, COMPLETE THIS FORM AND INCLUDE IT WITH YOUR AS-BUILT MITIGATION REPORT. SEND ALL DOCUMENTS TO THE ADDRESS REFERENCED BELOW.

THE COMPLETION OF THIS FORM HEREBY CERTIFIES THAT I,

BRIAN MAJKA (PRINT NAME),  (SIGNATURE), **JULY 15, 2005** (DATE)

OF THE CONSULTING FIRM: JFNew & Associates, Inc.

SUPERVISED THE CONSTRUCTION OF THE REFERENCED WETLAND/STATE OPEN WATER MITIGATION PROJECT. I WAS PRESENT DURING CRITICAL STAGES OF CONSTRUCTION TO CONFIRM THAT ALL CONDITIONS OF THE MITIGATION APPROVAL WERE ADHERED TO, THAT THE ANTICIPATED HYDROLOGY WAS ACHIEVED AND HEREBY CERTIFY THAT THE PROJECT WAS CONSTRUCTED IN CONFORMANCE WITH ALL NJDEP APPROVED PLANS AND SPECIFICATIONS CITED BELOW, INCLUDING FIELD ADJUSTMENTS AGREED UPON DURING ONSITE MEETINGS WITH NJDEP MITIGATION STAFF ON THE FOLLOWING DATES: ___June 24, 2005_____.

PERMIT NUMBER: 1439-04-0001.1 (FWW 040001)
ISSUANCE DATE: February 25, 2005
NAME OF PERMITTEE: L.E. Carpenter & Company
PROJECT NAME: Source Reduction Remedial Project

AS BUILT SURVEY IS IDENTIFIED AS:
Appendix B: Source Reduction Wetland Impact Specific Survey Coordinate Table
Figure 2: As-Built Wetland Restoration Map

ADDRESS OF SURVEY FIRM:
Weber Associates, Inc.
47 Woodport Road
Sparta, NJ 07871-2417

TELEPHONE #: (973) 726-4240

E-MAIL ADDRESS:

FAX #: (973) 726-4239

SEND TO STATE OF NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION, LAND USE REGULATION PROGRAM, P.O. BOX 439, TRENTON, NJ 08625, ATTN: MITIGATION SECTION